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(54) **Communication system for a rail vehicle and method for communicating with a rail vehicle**

(57) A communication system (106, 126) for a rail vehicle (100, 102, 104) includes a transceiver assembly (200, 202), a selection module (204, 206), and a monitoring module (212, 214). The transceiver assembly (200, 202) selectively communicates a data signal over a plurality of communication channels. The data signal is related to distributed power operations of the rail vehicle (100, 102, 104). The selection module (204, 206) is communicatively coupled with the transceiver assembly (200, 202) and switches the transceiver assembly (200, 202) to any of the communication channels. The monitoring module (212, 214) is communicatively coupled with the selection module (204, 206) and determines a load parameter of one or more of the communication channels. The load parameter is based on a population value of the one or more communication channels. The selection module (204, 206) switches the transceiver assembly (200, 202) to a selected channel of the communication channels based on the load parameter for communicating the data signal over the selected channel.

to any of the communication channels. The monitoring module (212, 214) is communicatively coupled with the selection module (204, 206) and determines a load parameter of one or more of the communication channels. The load parameter is based on a population value of the one or more communication channels. The selection module (204, 206) switches the transceiver assembly (200, 202) to a selected channel of the communication channels based on the load parameter for communicating the data signal over the selected channel.

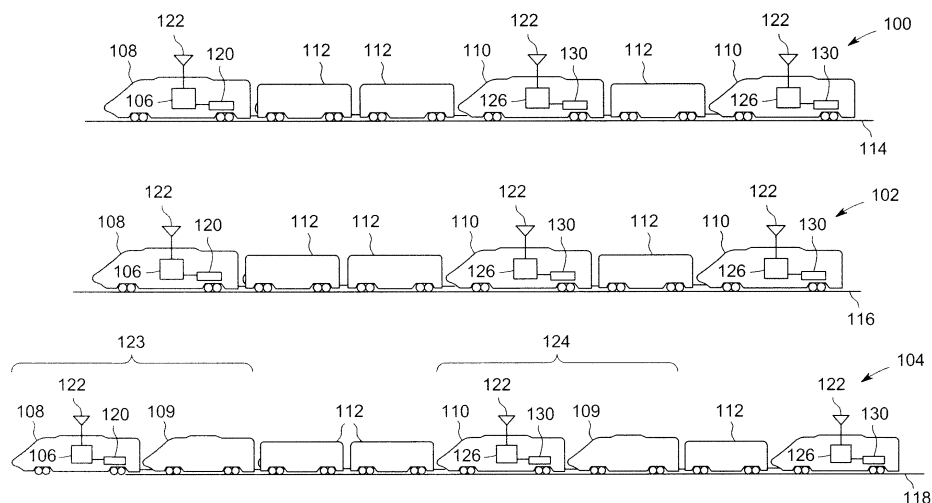


FIG. 1



## EUROPEAN SEARCH REPORT

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| DOCUMENTS CONSIDERED TO BE RELEVANT                                                                                                                                                                                                                    |                                                                                                                                              |                                                                                                                                                                                                                                                                              |                                         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| Category                                                                                                                                                                                                                                               | Citation of document with indication, where appropriate, of relevant passages                                                                | Relevant to claim                                                                                                                                                                                                                                                            | CLASSIFICATION OF THE APPLICATION (IPC) |
| Y                                                                                                                                                                                                                                                      | US 7 395 141 B1 (SECK DARYL WILLIAM [US] ET AL) 1 July 2008 (2008-07-01)                                                                     | 1-3,5,6,9,10,12,13                                                                                                                                                                                                                                                           | INV.<br>B61L15/00                       |
| A                                                                                                                                                                                                                                                      | * column 3, line 65 - column 4, line 16 *<br>* column 5, line 63 - column 6, line 13 *<br>* column 9, line 23 - line 59 *<br>* figures 1,4 * | 4,7,8,11,14,15                                                                                                                                                                                                                                                               |                                         |
| Y                                                                                                                                                                                                                                                      | US 2009/117899 A1 (SHIFF YONI [IL])<br>7 May 2009 (2009-05-07)<br><br>* paragraph [0014] *<br>* paragraph [0018] *<br>* figure 1 *           | 1-3,5,6,9,10,12,13                                                                                                                                                                                                                                                           |                                         |
|                                                                                                                                                                                                                                                        |                                                                                                                                              |                                                                                                                                                                                                                                                                              | TECHNICAL FIELDS SEARCHED (IPC)         |
|                                                                                                                                                                                                                                                        |                                                                                                                                              |                                                                                                                                                                                                                                                                              | B61L                                    |
| The present search report has been drawn up for all claims                                                                                                                                                                                             |                                                                                                                                              |                                                                                                                                                                                                                                                                              |                                         |
| Place of search<br>Munich                                                                                                                                                                                                                              |                                                                                                                                              | Date of completion of the search<br>16 September 2015                                                                                                                                                                                                                        | Examiner<br>Janhsen, Axel               |
| CATEGORY OF CITED DOCUMENTS<br>X : particularly relevant if taken alone<br>Y : particularly relevant if combined with another document of the same category<br>A : technological background<br>O : non-written disclosure<br>P : intermediate document |                                                                                                                                              | T : theory or principle underlying the invention<br>E : earlier patent document, but published on, or after the filing date<br>D : document cited in the application<br>L : document cited for other reasons<br>& : member of the same patent family, corresponding document |                                         |

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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.  
The members are as contained in the European Patent Office EDP file on  
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16-09-2015

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82